

REMARKS

Introductory Remarks

Reconsideration and further examination of the subject patent application in light of the present Amendment and Remarks is respectfully requested. Claims 1-14 are pending in the application, claims 1-8 and 10-14 stand rejected, and claim 9 stands objected to. New claims 15-17 have been added.

Rejection Under 35 U.S.C. §112

Claims 1-14 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, as set forth on page 2 of the Office Action. In view of independent claims 1 and 7 as presently amended, applicant respectfully traverses this rejection. Claims 1 and 7 have been amended to more clearly define the maximum tensile stress imposed on the pipe. Proper antecedent basis is now provided for all terms.

Rejection Under 35 U.S.C. §102

Claims 1-8 and 10-14 stand rejected under 35 U.S.C. §102(b) as being anticipated by Heller, as set forth on pages 2-3 of the Office Action. In view of the claims as presently amended, applicant respectfully traverses this rejection.

The present invention is a bellows-type pipe coupling that can accommodate both axial displacement and torsional displacement between two pipes segments. Torsional displacement may be caused by twisting between two pipe segments, and axial displacement may be caused by bending and/or lateral offset, and/or compression and extension, between two pipe segments. Additionally, torsional displacement creates lateral displacement as the twisted section “shrinks,” much like a rope

“shrinks” when twisted. The claimed invention accommodates both torsional and axial displacement by utilizing a single structural element, namely, the intermediate portion of the pipe coupling. This elegant and simple approach minimizes the complexity of the device, reduces manufacturing and stocking costs, and permits precise and cost effective manufacturing. It is significant that the invention accommodates all of the above-described displacements in a single device using a one-piece structure. Heller cannot do this.

Heller cannot accommodate axial displacement and torsional displacement using a single structure. Heller requires two or more separate pieces. For example, as shown in Figs. 11, 29 and 30, the helical corrugations accommodate torsional displacement. Note, however, that when the ends of the pipe are subject to torsional displacement or twisting, the body must contract. The single structure that accommodates the torsional displacement (the helical corrugated structure) cannot by itself accommodate the resulting axial displacement.

In sharp contrast to applicant’s claimed invention, to absorb the resulting axial displacement, Heller specifically adds the transverse corrugations 98 (Fig. 29). This second structure expands and contracts to accommodate the axial displacement caused by the twisting. Heller discloses that the central bellows “is normally positioned between two end bellows [98], provided to absorb the decrease in length of the center bellows as it is torsionally displaced.” Col. 1, lines 32-37. Thus, as the bellows of Heller twists, it shrinks or is displaced axially. A single structure in Heller cannot handle both forms of displacement. Rather, two structures must be used.

It is clear that there is no single structure in Heller that can accommodate both torsional and axial displacement. Two structures must be used. Such an element is completely missing in Heller, which requires two structures to accomplish this. Because at least one significant element of

applicant's claimed invention is missing from the device in Heller, Heller cannot anticipate applicant's claimed invention. Accordingly, applicant asserts that independent claims 1 and 7 are allowable over Heller, and that claims depending therefrom, respectively are allowable as depending from allowable base claims.

New claims 14-17 are also distinguishable over Heller based on the above arguments.

Closing Remarks

The art made of record by the Examiner but not relied upon as a basis of rejection, does not, whether taken alone or in combination with Heller, anticipate or render obvious any of applicant's claims as now amended in the application.

For the foregoing reasons, applicant submits that the subject application is in condition for allowance and earnestly solicits an early Notice of Allowance. Should the Examiner be of the opinion that a telephone conference would expedite prosecution of the subject application, the Examiner is respectfully requested to call the undersigned at the below-listed number.

The Commissioner is hereby authorized to charge any additional fee which may be required for this application under 37 C.F.R. §§ 1.16-1.18, including but not limited to the issue fee, or credit any overpayment, to Deposit Account No. 23-0920. Should no proper amount be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal, or

even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit
Account No. 23-0920.

Respectfully submitted,

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